FLOUR MIXERS

AND

MACHINERY FOR BLENDING PLANTS

S. HOWES CO., Inc.
SILVER CREEK, N. Y.

CATALOGUE No. 78

Trade

Mark

A Badge of Distinction

The dictionary says that EUREKA is a Greek word meaning—'I have found it!' Many a student with some difficult problem before him has, upon solving it, exclaimed —"EUREKA!" Many a miller and flour factor with intricate manufacturing, sales and distributing problems perplexing him has solved them by installing "EUREKA" Machinery.

"EUREKA" is an emblem of success. We are proud that we own such a Trade Mark, but above all do we glory in the knowledge that every machine shipped from our factory with "EUREKA" stenciled on it is truly worthy of the name it bears.

As "EUREKA" on Flour Blending Machinery always has been, so it always will be the mark that distinguishes the Best from the rest.

You are cordially invited to visit the Eureka Works. Here in our modern plant you will be impressed by a personal observation of our business methods, and the painstaking care given "EUREKA" customers.

Our Executives will be glad to meet you.

S. HOWES COMPANY, Inc.

A. C. BARBEAU, President
M. L. BARBEAU, Treasurer
W. K. MILLER, Secretary

Eureka Works
Silver Creek, N. Y.

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THE MANUFACTURE OF SELF-RISING-FLOUR is treated in the first section of this book, pages 2 to 19.

THE BLENDING OF FLOURS is covered by section two, pages 20 to 26.

TESTIMONIALS will be found on pages 12, 13, 27 and 28.

Self-rising Flour

The first conception of mechanical leavening of flour originated in the fertile mind of the world-famous chemist, Liebig. In his research work there came to him the inspiration that bicarbonate of soda, commonly known as baking soda, could be utilized with acid phosphate of calcium for the generation of carbonic acid gas in the baking process. His conception was to leaven flour by mixing with it acid phosphate of calcium and bicarbonate of soda; there you have flour that is self-rising, except that today it is customary to add a small amount of salt for seasoning.

Liebig not only proved that self-rising flour produced more oven product—biscuit or cake—than flour and yeast, but also that the oven product contained wholesome phosphatic salts, which greatly add to the nutritive value. Therefore, because he considered it the ideal baking acid, he confined his work and his recommendations to the use of phosphate. Not only is phosphate more preferable to all other available baking acids from a dietetic standpoint, but also from a commercial standpoint. It has the advantage of lower cost than cream of tartar, for example, which has always been considered a satisfactory baking acid.

As we recall the self-rising flour industry of, say, 25 years ago, the housewife, the real consumer, was somewhat apathetic, and without her support, the business could not succeed. The reason for this unpopularity is now readily understood and chemical science has played a most important part in discovering the imperfections of the self-rising flour of those early days.

Self-rising flour, as made years ago, did not bake as well, even when freshly made, as the product of today. One of the greatest obstacles to overcome was that the finished product would not keep in the hands of the distributor. By the time it was placed with the housewife, it was found that premature chemical reaction had taken place in the package, dissipating the valuable carbonic acid gas before the flour reached the consumer, and making the flour practically useless for baking purposes. The underlying cause for this deficiency was solely due to impurities in the phosphate. It contained inordinate percentages of free phosphoric acid, which, in itself is a very dangerous constituent, because it has the same action as moisture. When present even in very minute quantities, more free moisture would be absorbed from the air, thus causing a premature reaction between the phosphate and soda.

By extensive research work, the application of new chemical principles to the art of manufacturing phosphate, and working out more carefully and accurately adjusted scientific processes, a phosphate was produced that was absolutely free from this undesirable free acid. With this development, for the first time it was possible to make a flour self-rising, which not only would bake perfectly when fresh, but retained its full baking strength until used by the consumer.

The first attempt to market self-rising flour on a commercial basis was made by a small manufacturer in Nashville, Tenn., and from his effort dates the new era of self-rising flour. The growth was gradual, but when the consumer finally realized that a product was being offered which meant satisfactory baking results, day in and day out, with labor reduced to the minimum, self-rising flour came into its very own. It is a most significant fact, however, that the self-rising flour industry has grown without the usual advertising.

When the self-rising flour idea was presented to the housewife in the proper form, it required very little publicity to win her instant approval. She appreciated at once the saving in labor and the reliability of the flour resulting from the proper adjustment of ingredients. It meant to her that those days of unsatisfactory baking which occur to every woman in the home at times, were practically over. She knew and realized that, in her small pastry work, as biscuits, pies, pancakes, small cakes, etc., self-rising flour met perfectly her every requirement.

Following the modest attempt at Nashville, flour millers, particularly in the Southern States, realized that self-rising flour would prove a necessary adjunct to their business. But it is hard to conceive that the tremendous volume of self-rising flour manufactured today has developed from such a small beginning.

I believe it can be claimed, without exaggeration, that many millers operating, particularly in self-rising biscuit flour territory, are making from 65 to 75 per cent.—possibly more—of their entire output into self-rising flour. Even in the territories where self-rising biscuit flour is practically unknown, we find a very large distribution of self-rising pancake flour.

It might appear that making flour into self-rising would mean considerable added expense, elaborate equipment, additional labor, and more than ordinary care. As to the cost—it requires but an efficient mixing machine, which can be procured at a moderate price, and which can be connected with very little difficulty to any unit. The cost of the necessary ingredients is very reasonable, and, at times, the cost of these ingredients is completely absorbed by the value of the flour they displace.

Self-rising flour requires, above all, extreme care in the mixing and preparation of the ingredients. It is absolutely essential that the soda and phosphate be correctly and accurately weighed and proportioned, and that they be thoroughly distributed throughout the flour. The necessity for this great caution can be readily seen, for, should a batch be run that is deficient in soda or phosphate—or vice versa—when distributed to the trade in the form of self-rising flour, it would result in either an alkaline or acid oven product, depending upon which ingredient is in excess.

I believe that you will agree with me that this is an all-important factor, because the average consumer does not appreciate or does not know intimately the care exercised by the miller, not only in making his plain flour, but also his self-rising flour. When she does not meet with her usual success, she immediately feels that something must be wrong with the flour. It is because of this that I urge very strongly to the manufacturers of self-rising biscuit or pancake flour that they be very careful in selecting their ingredients. Be as careful in selecting ingredients as you are in maintaining the quality of your flour, and use every precaution to see that these ingredients are correctly and accurately weighed, measured and distributed in the mix.

I might add that particular care must be exercised in the selection of phosphate. That ingredient is most important, for upon it your finished product absolutely depends for baking results, stability and purity. Phosphate is so very important in the making of self-rising biscuit and pancake flour that the greatest care and chemical control must be exercised in its manufacture. The manufacturer of phosphate must carefully select his raw materials with the aim to make a product as pure as is chemically possible. He must exercise painstaking chemical control and supervision during the process of converting that raw material into the finished product, so that every pound of phosphate that is turned out from his factory has a uniform neutralizing strength. The action with soda will then be such that just enough of the carbonic acid gas is released in the cold and the greater part reserved for the heat of the oven, thus assuring perfect baking results and an oven or griddle product of good texture, color and flavor. Upon careful selection of phosphate, therefore, depends to a very large extent the ultimate success of self-rising flour.

During the days of the great war self-rising flour proved to be a very important factor in the conservation of food. It was proved, beyond any doubt, that self-rising flour prevents waste, requires no sugar, and saves fuel. Because the chemical reaction that takes place is mechanical, rather than organic, as in the case of yeast, no flour is lost in its reaction. While this saving, to be sure, may seem almost infinitesimal in the individual case, in the aggregate the saving of flour is almost incredible. These facts are so well substantiated that they cannot be questioned in times of necessity, but also in times of prosperity self-rising flour should be encouraged as a meritorious food product, and one that possesses high merit.

Many of us have observed the tremendous growth in the use of self-rising flour. In certain localities, a few years ago, hardly a barrel or even a sack of self-rising flour was used. In those same localities today I will venture to say there is used as much, or

more, self-rising flour than plain flour. In view of this, I venture a prediction that, even in the localities where today self-rising flour is practically unknown, in a few years it will be fully as popular as in what is known now as "self-rising flour territory." This prediction is prompted solely by the merits of self-rising flour and its particular appeal to the housewife.

It has reached its present popularity because it saves labor and fuel; it is decidedly wholesome, nutritious and convenient; it prevents waste and failure in the kitchen, producing most perfect baking results. Briefly, it meets every requirement of the modern housewife.

In these days of progressive milling it may be that many of you are thinking seriously of adding a Self-rising Flour Department to your equipment. I am quite sure that it would prove a most valuable and profitable adjunct to your business.

The Manufacture of Self-rising Flour

There is nothing mysterious about the making of self-rising flour. Costly equipment is not needed, nor is skilled labor required. Anyone of average ability can take care of the whole proposition—both the machinery and the manufacturing process.

The operation in itself is simple, but the real secret in making good self-rising flour lies in the manner of mixing the leavening elements—phosphate, soda and salt.

The usual procedure is to first put the flour into the Mixer; then the carefully weighed out quantities of bicarbonate of soda and salt. Mix these two ingredients into the flour for a minute or two before adding the phosphate. After all the ingredients are in the Mixer the machine should run 8 to 10 minutes longer. The actual time required will depend upon the kind of product to be made.

Under no circumstances should the soda and phosphate be mixed before they are added to the flour because the flour acts as a filler and will prevent the soda from being prematurely reacted upon by the phosphate.

Use good flour and don't let a small difference in price prevent your buying the very best soda and the very best phosphate obtainable.

We take pleasure in presenting for the convenience of our customers on page 7 a number of standard recipes for various kinds of Self-rising Flours.

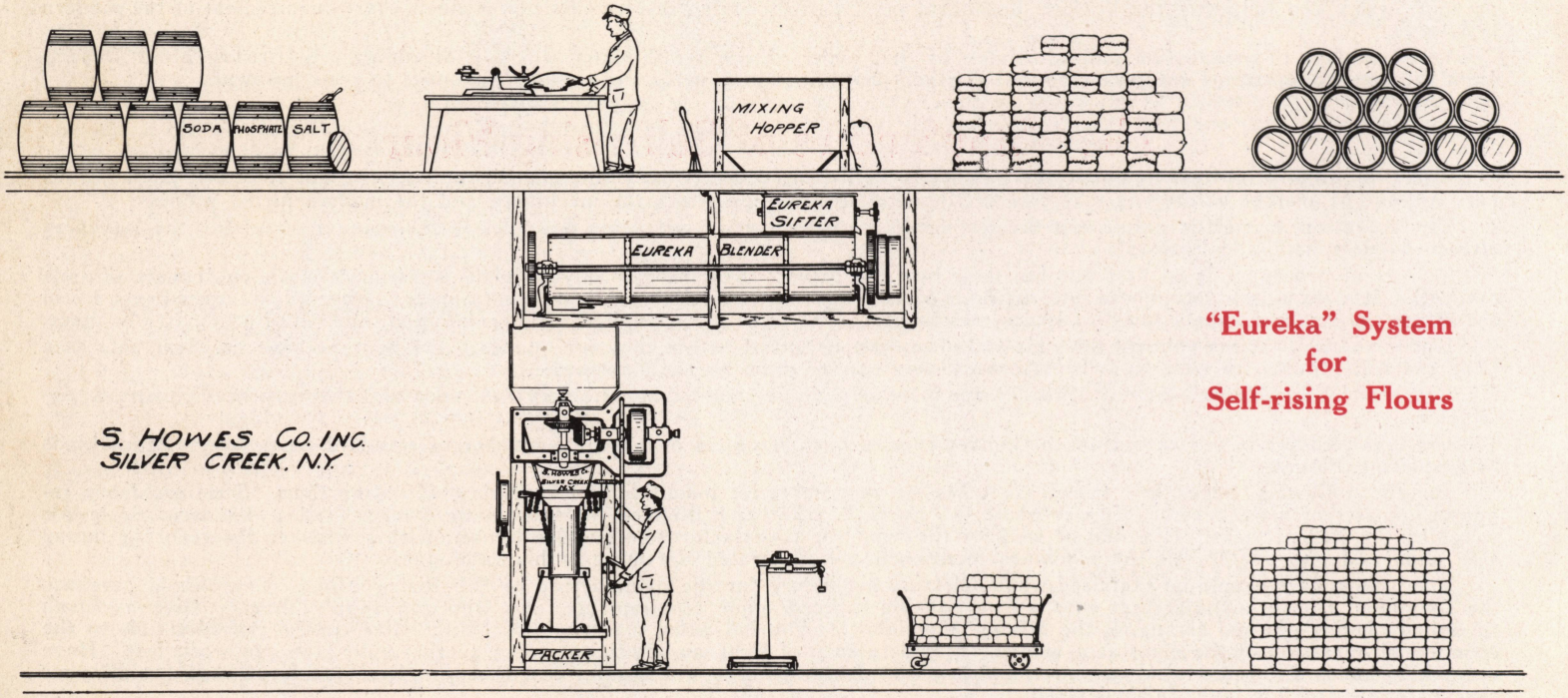
On the following pages are shown sketches of representative installations for making self-rising flour. The machinery required consists of a Suspension Hopper Scale; a "Eureka" Sifter and Blender; an Automatic Packer, and a Platform Scale for weighing the packed sacks. It would be well for the would-be manufacturer to provide himself with a Crusher for reducing lumpy salt, soda and phosphate. All the machines mentioned are illustrated elsewhere in this Catalogue.

The utmost care should be exercised when selecting machinery for the manufacture of Self-Rising Flour. You should purchase the equipment from a manufacturer who is in a position to know your requirements, and who can supply them. Give as much thought to laying out and arranging the Mixing Machinery as you did when planning your mill. Give careful consideration to the economical operation of the plant as a whole. Provide plenty of light, and sufficient space so that your men can work fast. Have everything handy and economical operation and low manufacturing cost will result. See that you have ample storage for all your raw materials and for your finished product.

Improved Machinery for Flour Blending Plants

A very complete line of equipment particularly adapted to the requirements of Flour Distributors, Wholesale Grocers and Baking establishments is illustrated and described on Pages 20 to 26.

The plant here shown, takes up but very little space. Because of the special arrangement of machinery and connections one can produce goods of absolutely positive uniformity—each and every sack alike, and the handling cost has been shown to be much below the average.



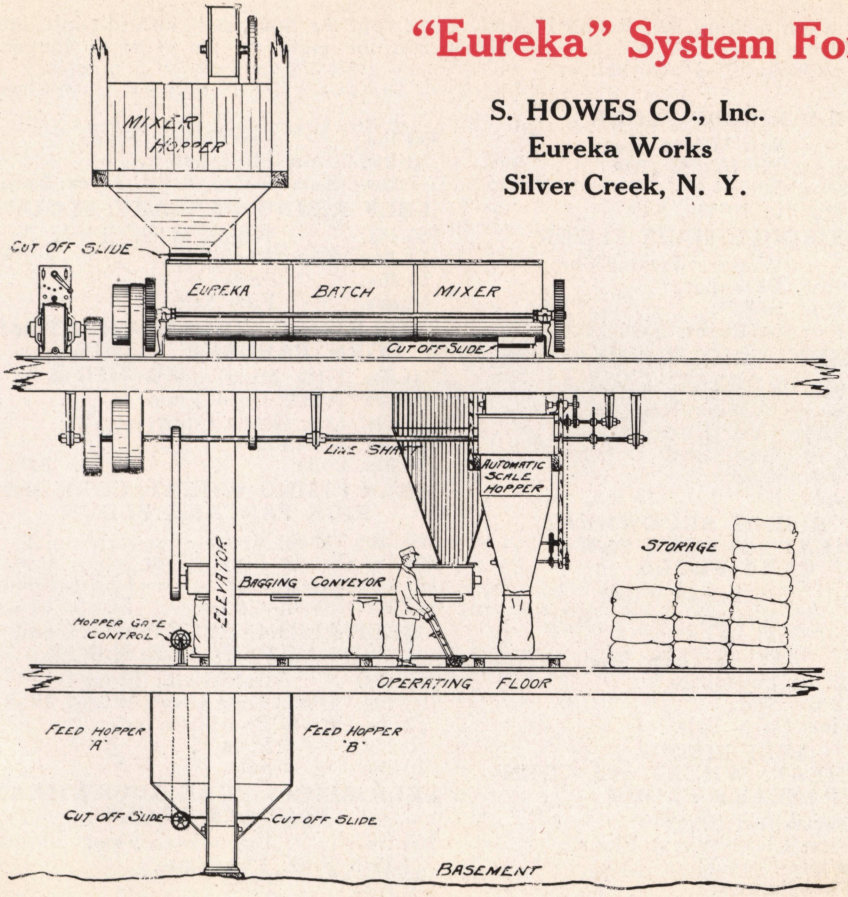
"Eureka" System for Self-rising Flours

Instructions for making Self-rising flours and a number of Recipes will be found on pages 4 and 7.

Use "Eureka" Machinery, good flour and high grade chemicals. Give your manufacturing operations as much attention as any other department of your mill, and increased business and profits will result.

"Eureka" System For Self-Rising Flour

S. HOWES CO., Inc.
Eureka Works
Silver Creek, N. Y.



The owner of this plant informs us that his manufacturing cost is much below that of his competitors and adds that "the machinery has been giving excellent service and we like it very much."

The marked preference for the "Eureka" Mixer is clearly the result of its fine performance records in the hands of owners in all parts of the country.

The reader will note that at the elevator boot there are two hoppers marked 'A' and 'B'. The various flours are dumped into—we'll say—'A'. When filled with the required quantity, the slide in the bottom of hopper 'A' is opened and the flour is carried up by the elevator into the MIXER HOPPER. Whilst 'A' is being emptied, the operator should be filling hopper 'B'. As soon as the MIXER HOPPER is filled, an attendant on the upper floor pulls the slide and the flour passes into the Batch Mixer. Here he should put in salt and soda, run the machine two or three minutes, and then add the phosphate. The Mixer should be allowed to run for eight or ten minutes longer. At the end of that time the first batch will have been thoroughly blended. The Mixer discharge slide is then opened, and the finished flour flows into a bin, and thence into an Automatic Scale or a Packer.

The process as described is practically continuous as long as the attendants keep Hoppers 'A' and 'B' filled alternately.

RECIPES

It is highly essential that an efficient Mixer be used when making Self-Rising Flours. First—put the flour, soda and salt into the machine and allow it to run for a minute or two; then add the phosphate and let the Mixer run for eight or ten minutes longer. Care should be taken not to have any lumps in the flour, phosphate, soda or salt.

500 lbs. Soft Wheat Flour.
17 lbs. 8 oz. Phosphate (45%)
7 lbs. 14 oz. Soda.
6 lbs. 4 oz. to 10 lbs. Salt.

SELF RISING PASTRY FLOUR

500 lbs. Winter Wheat Flour
17 lbs. 8 oz. Phosphate
7 lbs. 8 oz. Soda
8 lbs. 12 oz. Salt.

SELF RISING PANCAKE FLOUR

165 lbs. Clear Flour
165 lbs. Middlings
165 lbs. Low Grade Flour
20 lbs. Phosphate
10 lbs. Soda
10 lbs. Salt.

SELF RISING WHEAT and CORN PANCAKE FLOUR

245 lbs. Medium Grade Wheat Flour
255 lbs. White Corn Flour
18 lbs. 12 oz. Phosphate
6 lbs. 14 oz. Soda
10 lbs. Salt.

SELF RISING BUCKWHEAT, WHEAT and CORN PANCAKE FLOUR

250 lbs. Buckwheat Flour
100 lbs. Low Grade Wheat Flour
100 lbs. White Corn Flour
20 lbs. Phosphate
10 lbs. Soda
10 lbs. Salt.

SELF RISING FLOUR

500 lbs. Soft Wheat Flour
9 lbs. 6 oz. Phosphate (80%)
7 lbs. 8 oz. Soda
6 lbs. 4 oz. to 10 lbs. Salt.

SELF RISING BISCUIT FLOUR

500 lbs. Winter Wheat Flour
9 lbs. 6 oz. Phosphate
7 lbs. 8 oz. Soda
8 lbs. 12 oz. to 10 lbs. Salt.

SELF RISING WHOLE WHEAT and CORN PANCAKE FLOUR

360 lbs. Whole Wheat Flour
120 lbs. White Corn Flour
69 lbs. First Clear Flour
27 lbs. Phosphate
12 lbs. Soda 12 lbs. Salt.

SELF RISING BUCKWHEAT, WHEAT and CORN PANCAKE FLOUR

300 lbs. Buckwheat Flour
150 lbs. Medium Grade Wheat Flour
50 lbs. White Corn Flour
18 lbs. 12 oz. Phosphate
8 lbs. 12 oz. Soda
10 lbs. Fine Dairy Salt.

SELF RISING BUCKWHEAT, WHEAT and CORN PANCAKE FLOUR

360 lbs. Buckwheat Flour
69 lbs. First Clear Wheat Flour
120 lbs. White Corn Flour
27 lbs. Phosphate
12 lbs. Soda 12 lbs. Salt.

500 lbs. Soft Wheat Flour
10 lbs. 10 oz. Phosphate
7 lbs. 8 oz. Soda 8 lbs. 12 oz. Salt.

SELF RISING PANCAKE FLOUR

500 lbs. Winter Wheat Flour
12 lbs. 8 oz. Phosphate
10 lbs. Soda
10 lbs. Fine Salt.

SELF RISING WHOLE WHEAT and CORN PANCAKE FLOUR

300 lbs. Fifth Middlings Reduction
100 lbs. White Corn Flour
50 lbs. Low Grade Flour
20 lbs. Phosphate
10 lbs. Soda 10 lbs. Salt.

SELF RISING WHEAT, CORN and RICE PANCAKE FLOUR

210 lbs. Wheat Flour
210 lbs. White Corn Flour
129 lbs. Rice Flour 12 lbs. Soda
27 lbs. Phosphate 12 lbs. Salt.

SELF RISING BUCKWHEAT and WHEAT PANCAKE FLOUR

375 lbs. Buckwheat Flour
82 lbs. 8 oz. First Clear Wheat Flour
22 lbs. 8 oz. Phosphate
10 lbs. Soda
10 lbs. Salt.

SELF RISING PURE BUCKWHEAT PANCAKE FLOUR

500 lbs. Buckwheat Flour
22 lbs. 8 oz. Phosphate
10 lbs. Soda
10 lbs. Fine Dairy Salt.

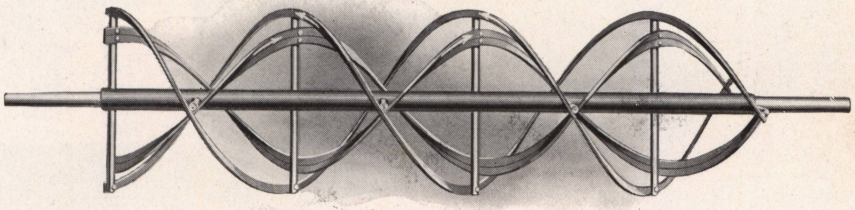
The "Eureka" Blender—Its Principle and Construction

The growth of the flour blending business has been marked by the appearance of scores of freakish contrivances. These have one by one passed on into the limbo of the abandoned and forgotten. The really efficient machines alone have survived.

The ancient Egyptians used paddles to do their mixing. Modern science has given us the "Eureka" Automatic Mixer.

There is as much difference between the 'Eureka' Blender and everyday mixing apparatus as there is between an up-to-date automobile and the old-time stagecoach. The one is a scientific attainment—the other a mechanical subterfuge which just beats the stock around and around in a hit-or-miss manner. The 'Eureka' Blender—always reliable and immune, as it is, to trouble and wear—is the inevitable preference wherever good machinery is understood and esteemed. No manufacturer once having used the 'Eureka' could be tempted to revert to his former method of blending flour.

Built on Honor



Sold on Merit

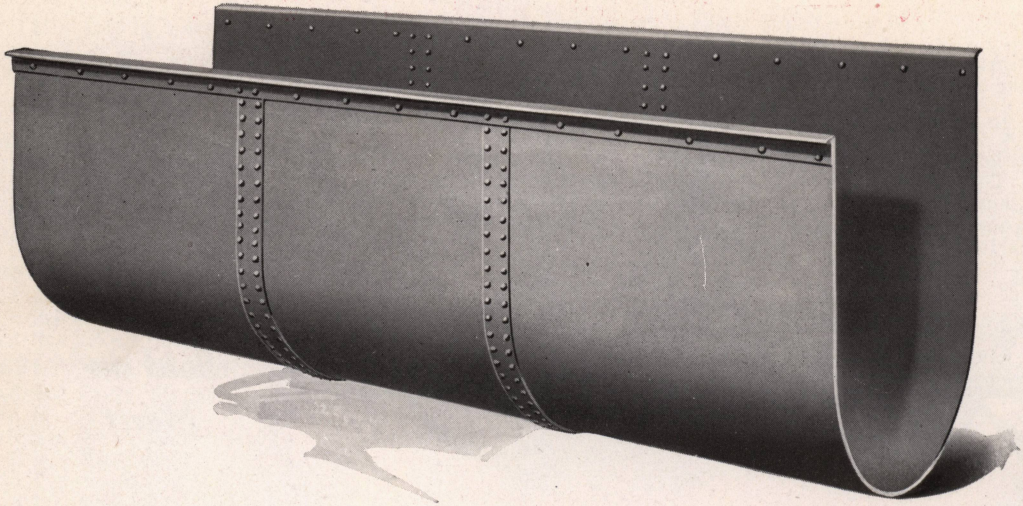
The agitating mechanism of a Blender is the most vital feature of the entire machine. Unless it is correctly designed and properly built, satisfactory service is out of the question. To its double helical cylinder may be credited the 'Eureka's' success. The large outer blade acts as a conveyor for propelling the stock. The inner or smaller one carries it in the opposite direction and retards it. The arrows on the above illustration clearly indicate the action just referred to. The ingredients are turned over and over, reversed, scattered and shuffled in every direction with lightning-like rapidity. They are carried back and forth, and up and down, and here and there until thoroughly amalgamated. It's a physical impossibility for the most minute portion of the commodity under treatment to remain undisturbed or dormant so long as the cylinder revolves. The stock doesn't bunch in the discharge end of a 'Eureka' Blender as it does in other machines. No matter how much or how little may be in the mixing chamber, it's always level.

The "Eureka" Cleans Itself

The agitating cylinder hugs the sides and bottom of mixer casing; it fits closely and in addition a flexible wiper strip is riveted to the outer edge of the larger conveyor blade. Thus is assured a clean mixing chamber after each batch of flour has been discharged.

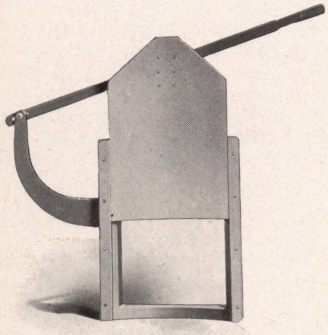
Your success in putting a Self-Rising Flour on the market depends upon Quality of ingredients and uniformity of mixing. Buy a "Eureka" Mixer and you will safeguard your product and profits.

DETAILS
of the "Eureka" Blender



At the left is an illustration of the steel casing which serves as the mixing chamber or container for the flour.

When a Blender is to be used for mixtures containing materials of a corrosive nature we furnish instead of the steel shell a sectional hardwood jacketing having rabbeted joints, the whole held securely together by bolts and heavy steel bands.



HEAVY DUTY CONSTRUCTION

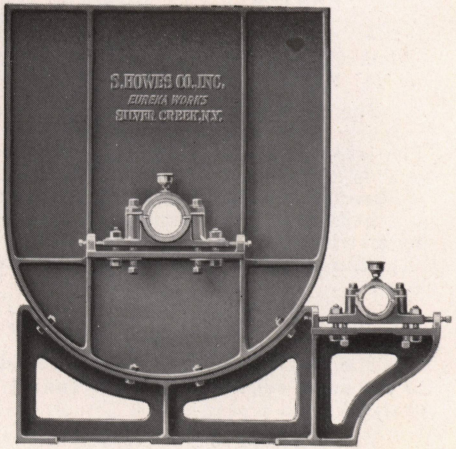
All joints are packed to prevent leakage and dusting out of flour.

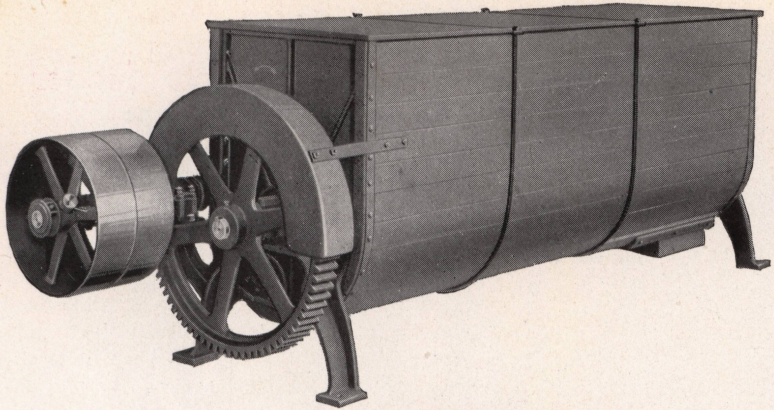
The view at right shows one of the two reinforced cast iron end plates. Note the heavy base and the supporting bracket for countershaft bearing.

Illustration at left shows discharge gate with lever for operating same. Works freely and easily. Does not leak flour.

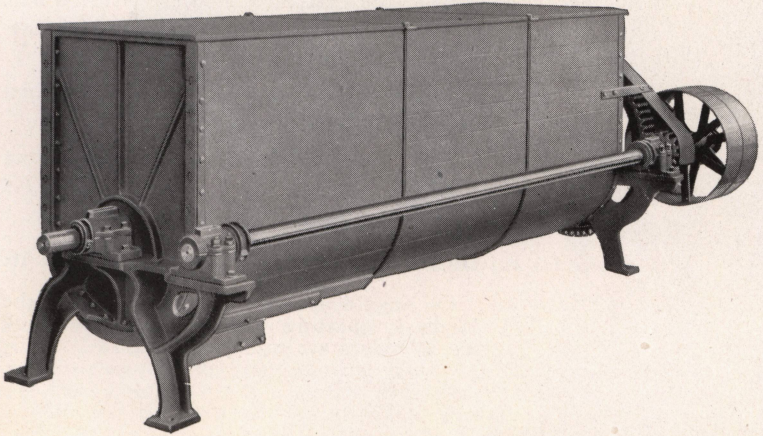
"Eureka" Mixers are gear driven and can be started with full load.

The illustrations on Pages 10, 11, 12 and 13 show how effectively the wide-faced gears are guarded. Safety first, last and all the time.





Front View of Style "A" Mixer



Rear View Showing Countershaft

"Eureka" Batch Blender

Back Geared Type

Style "A"

No machine offers greater money-earning possibilities than does this one when intelligently used. There is many a mill product which, if mixed with something else, would make an attractive selling proposition.

There is a steadily increasing demand for the hundred and one kinds of Self-Rising Flours, and for blends of Winter and Spring Wheat Flours. One can make Whole Wheat Flour by mixing together straight and clear flours and coarse and fine middlings; Pancake Flours by blending corn, wheat and rye flours, or corn, wheat and buckwheat flours. Low grades can be worked into rye meal and, depending upon market conditions, buckwheat flour will stand a certain percentage of fine middlings or patent flour. Some of the larger milling concerns are even blending brans.

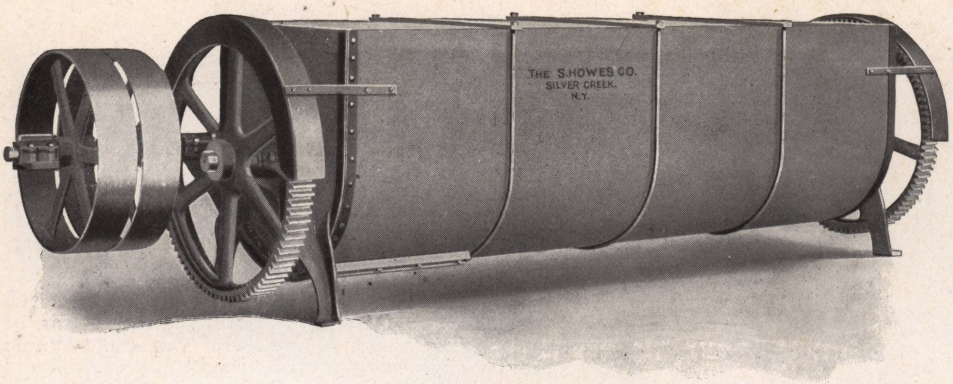
Familiarize yourself with "Eureka" superiority: then examine other machines. Compare them with the "Eureka." See if you can duplicate the latter's performance. Make this investigation with the idea of saving money. If you act on this advice your choice will be the "Eureka."

Dimensions, Capacities and Prices Page 16.

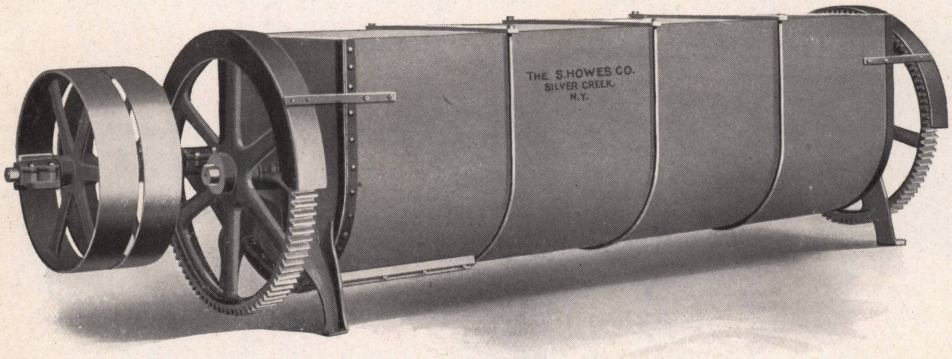
On page 8 is shown an illustration of the internal agitating mechanism with which our Blenders are equipped.

As all "Eureka" Blenders are gear driven they can be started up with a full load in the mixing chamber.

The 'Eureka' Cleans itself after each batch.



Style "A" Front View.



Style "A" Rear View Showing Countershaft.

"Eureka" Batch Blender

Back Geared Type

Style "A"

Time Saving ***Labor Saving***

The illustrations on this page show a machine having a capacity of half a ton per charge. The expense of installing an outfit of this character is very small indeed since it is an entirely self-contained unit. About all there is to do is to bolt it to the floor and provide a drive belt.

When one buys a "Eureka" he is not only getting the best blender there is to be had, but he is taking a long step toward increasing the efficiency of his whole plant.

It is less costly to buy a good Mixer than to suffer from a poor one.

The "Eureka" is a modern, profit-building machine.

Read the Testimonials on Pages 27, etc.

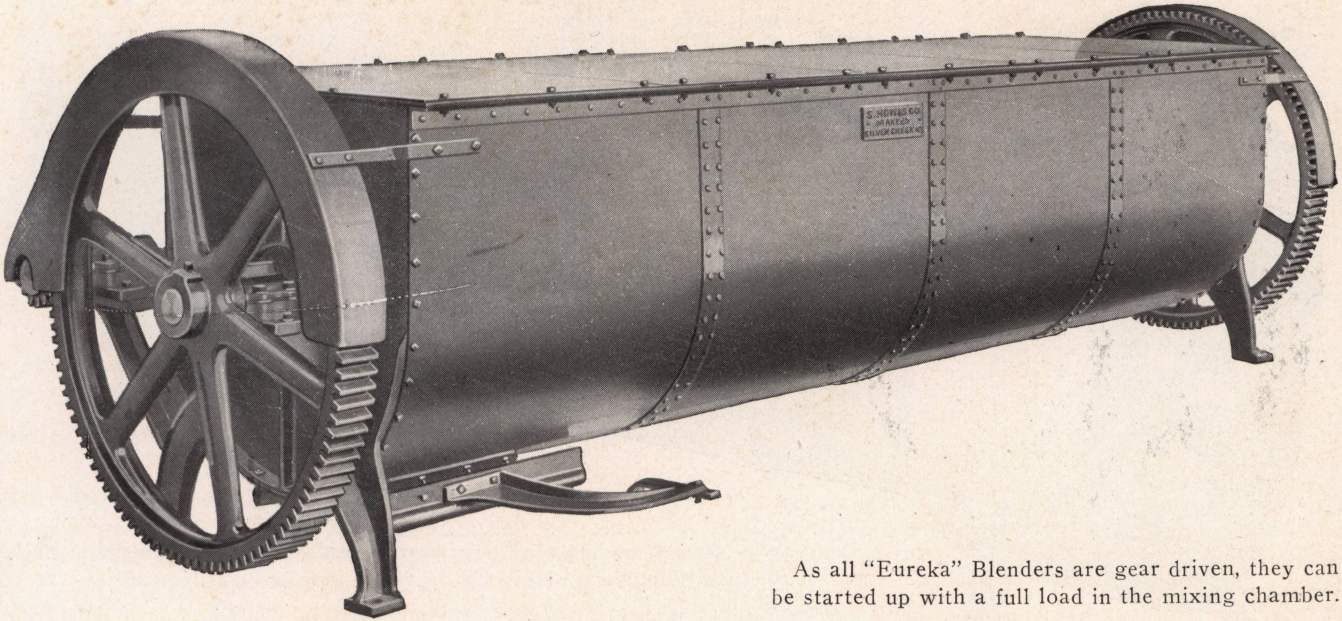
Dimensions, Capacities and Prices Page 16.

On page 8 is shown an illustration of the internal agitating mechanism with which our Blenders are equipped.

The 'Eureka' cleans itself after each batch.

A Giant "Eureka" Batch Mixer and Blender

Back Geared Type



As all "Eureka" Blenders are gear driven, they can be started up with a full load in the mixing chamber.

This is what is styled our "A" Drive. It is a self-contained, spur gear driven unit. Note the substantial discharge regulating mechanism.

THOSE WHO HAVE USED THE "EUREKA" ARE ITS STAUNCHEST FRIENDS

S. Howes Co. Inc.,
Silver Creek, N. Y.

Charlotte, N. C.

Gentlemen:—Replying to your inquiry of May 6th, we wish to say that we installed the No. 287 "Eureka" Sifter and Blender last December, and it has been in operation continually since that time in the manufacture of Self-rising flour.

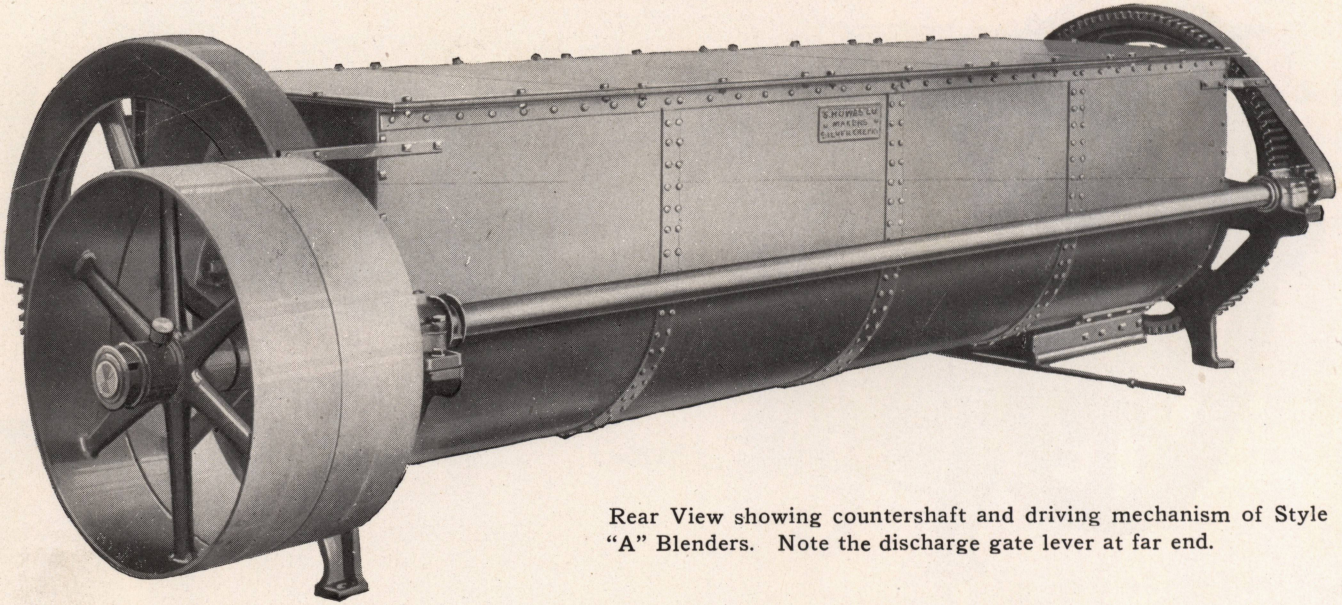
We use this machine for 1700 lbs. of flour to the batch, and it has given us entire satisfaction.

Yours very truly,

INTERSTATE MILLING COMPANY.

A Giant "Eureka" Batch Mixer and Blender

Back Geared Type



Rear View showing countershaft and driving mechanism of Style "A" Blenders. Note the discharge gate lever at far end.

EVERYTHING ESSENTIAL, EVERYTHING DESIRABLE IN THE "EUREKA."

S. Howes Co. Inc.,
Silver Creek, N. Y.

Denton, N. Car.

Gentlemen:—The Mixer is all O. K.—not any kick coming. As to any possible improvement on it, we haven't any to suggest.

Very truly yours,

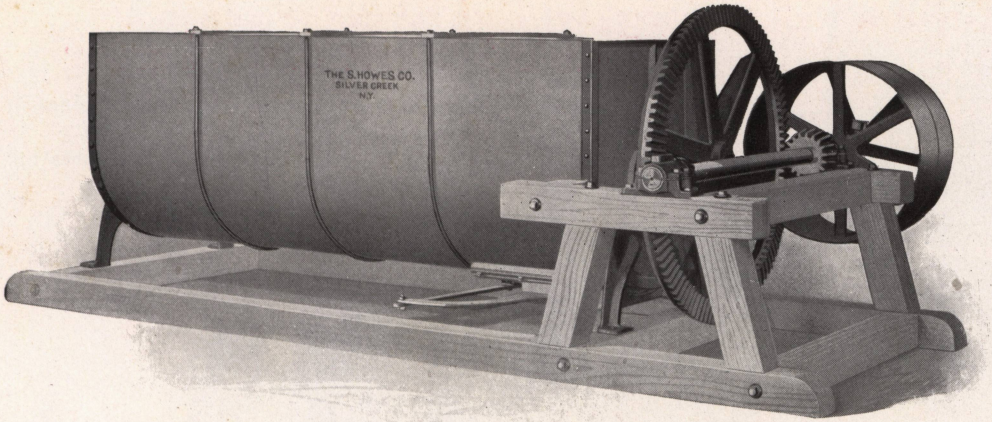
SNIDER ROLLER MILLS,
Broadway, Va.

S. Howes Co. Inc.,
Silver Creek, N. Y.

Gentlemen:—We are very well pleased with the Sifter and Blender.

Yours truly,

BROADWAY MILLING COMPANY, LTD.



Style "B" has a timber sub-base, outboard bearing and is bevel-gear driven.

"Eureka" Batch Blender

Bevel Geared Type

Style "B"

Used for a variety of purposes. They have been adopted by flour millers, flour dealers and distributors, bakers and by confectioners, cocoa, coffee and spice mills. They give universal satisfaction wherever installed. Construction, capacity and perfect blending fully guaranteed.

Quality Goes Clear Through.

Wherever "EUREKA" Mixers are operated, their Performance brings forth expressions of unqualified satisfaction from owners.

"EUREKA" machines are big and strong and rugged—made to run twenty-four hours a day, and three hundred and sixty-five days in a year, and they'll do it and do it so easily that you will forget that you have one on the job. Every time your machinery stops you are losing production hours, and production hours are what determine largely the status of your profit and loss account. You are sure of production hours and will avoid breakdown hours when "EUREKA" equipment is used. It cuts down the pay roll. Its ability to conserve time and labor is demonstrated daily in the finest and most successful plants throughout the country.

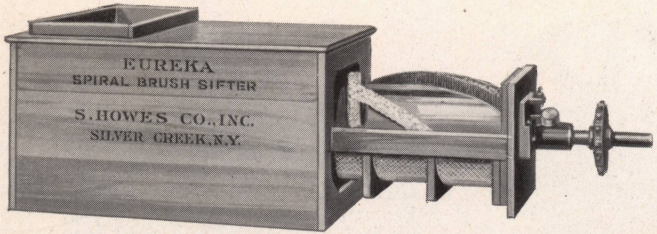
Convincing letters from our customers will be found on Pages 12, 13, 27 and 28.

Dimensions, Capacities and Prices Page 16.

On page 8 is shown an illustration of the internal agitating mechanism with which our Blenders are equipped.

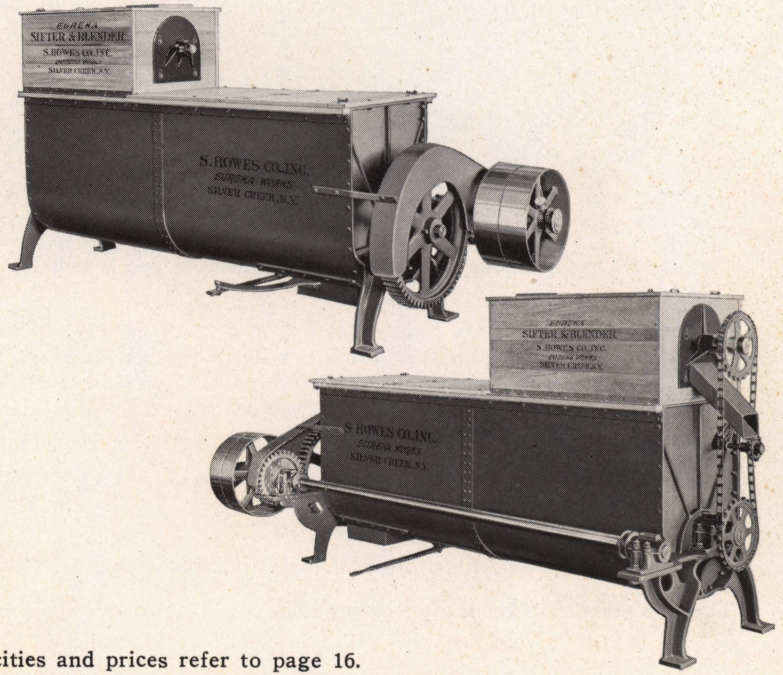
The 'Eureka' cleans itself after each batch.

"Eureka" Sifter and Blender



Here is shown a Combined Sifter and Mixer—two machines in one.

In employing this thoroughly up-to-date outfit one reduces the art of flour blending to its simplest form.



On top of the Blender is a cylindrical brush which revolves within a semi-circular frame covered with wire, and into which the flour or other material is fed, and where lumps are reduced and forced through the wire cloth and all coarse, foreign matter, sticks, splinters, barrel-linings, string, lint, etc., separated and discharged from the machine. To compensate for the wear of the bristles there is an adjustment provided whereby the spiral brush can be lowered within its case. Should it be necessary to renew the wire clothing the entire mechanism can be withdrawn as shown in the illustration.

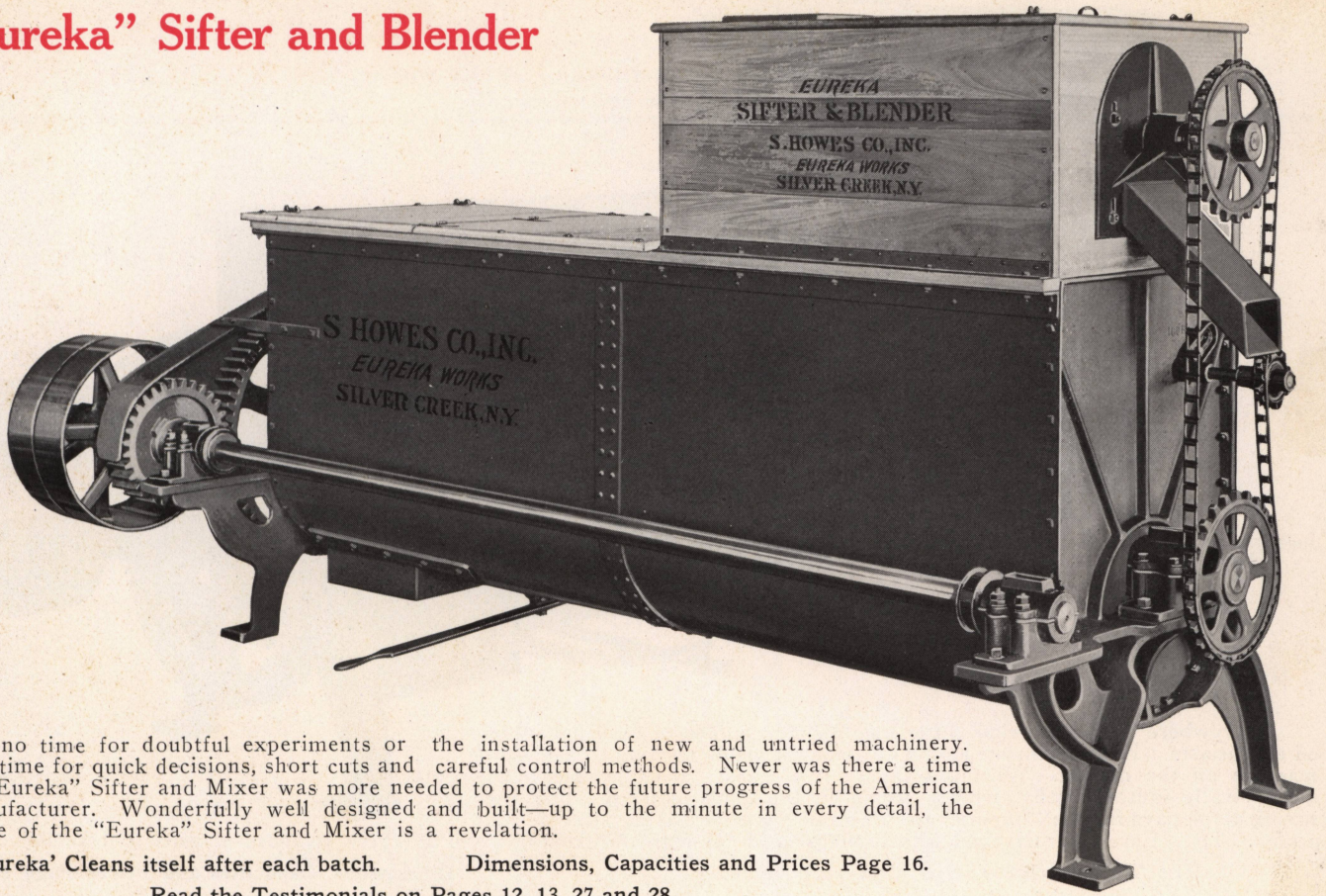
The flour passing through the sieve drops into the mixing chamber, in which is a double conveyor cylinder of special design, which makes it impossible for any of the material under treatment to escape being uniformly blended.

On page 8 is shown an illustration of the internal agitating mechanism with which "Eureka" Blenders are equipped.

The "Eureka" cleans itself after each batch.

For dimensions, capacities and prices refer to page 16.

"Eureka" Sifter and Blender

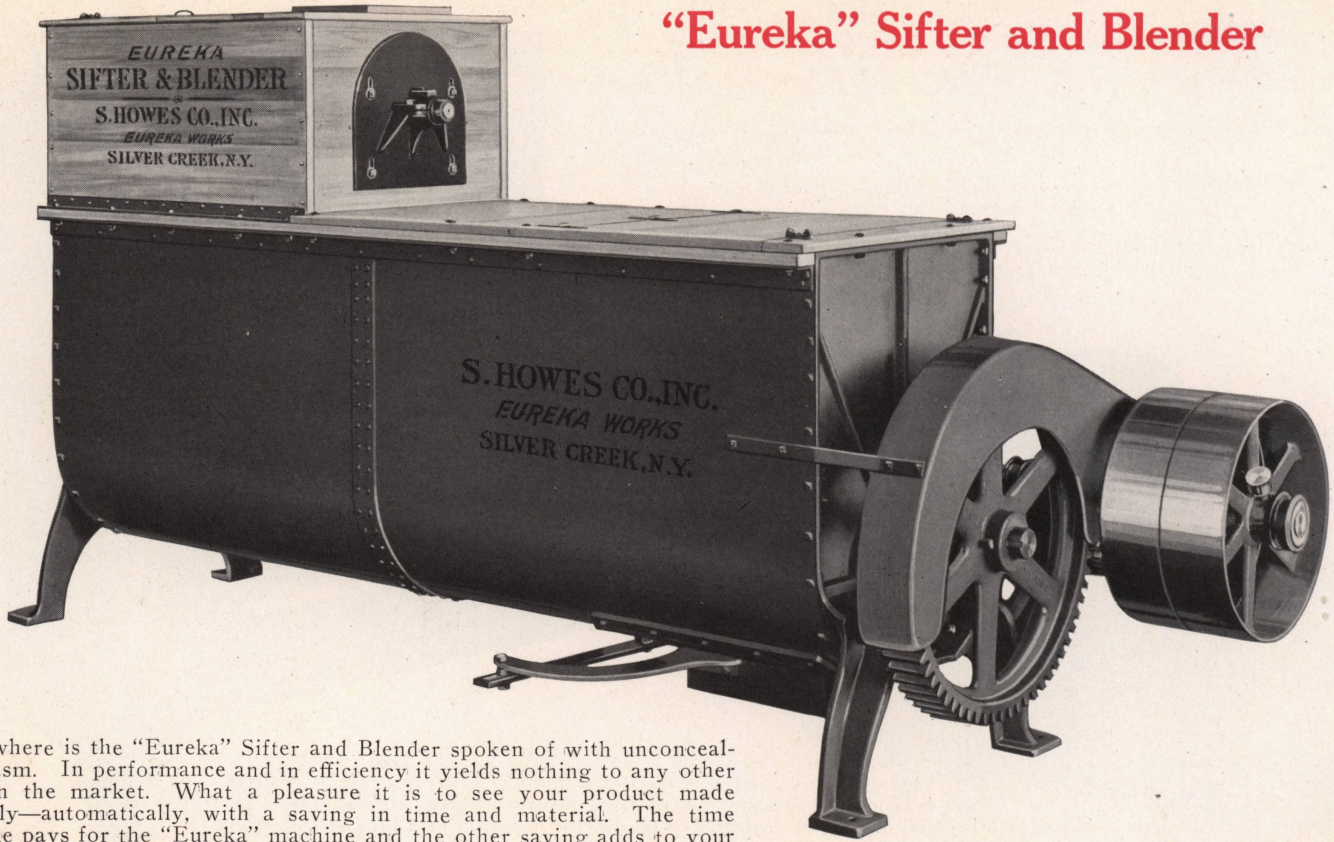


This is no time for doubtful experiments or the installation of new and untried machinery. Now is the time for quick decisions, short cuts and careful control methods. Never was there a time when the "Eureka" Sifter and Mixer was more needed to protect the future progress of the American Flour Manufacturer. Wonderfully well designed and built—up to the minute in every detail, the performance of the "Eureka" Sifter and Mixer is a revelation.

The 'Eureka' Cleans itself after each batch. **Dimensions, Capacities and Prices Page 16.**

Read the Testimonials on Pages 12, 13, 27 and 28.

"Eureka" Sifter and Blender



Everywhere is the "Eureka" Sifter and Blender spoken of with unconcealed enthusiasm. In performance and in efficiency it yields nothing to any other machine on the market. What a pleasure it is to see your product made mechanically—automatically, with a saving in time and material. The time saving alone pays for the "Eureka" machine and the other saving adds to your profits. The "Eureka" Sifter and Mixer has always been an outstanding value by every standard of price and quality comparison.

The 'Eureka' cleans itself after each batch.

Dimensions, Capacities and Prices Page 16.

Read the testimonials on Pages 12, 13, 27 and 28.

The "Eureka" Blender

Illustrated on pages 10, 11, 12, 13 and 14

Dimensions, Capacities and Prices

All previous lists cancelled

Size No.	281 Ft. In.	282 Ft. In.	284 Ft. In.	286 Ft. In.	287 Ft. In.	287B Ft. In.
Extreme height	2 10	3 7	3 5	4 1¾	4 1¾	4 1¾
Extreme length	9 0	11 5	11 9	12 7½	13 7½	16 7½
Extreme width	3 2	3 8	4 10	5 0½	5 0½	5 0½
Diameter of cylinder	1 6	2 0	2 6	3 0	3 0	3 0
Length of cylinder	6 0	8 0	8 0	8 0	9 0	12 0
Size of tight and loose pulleys, inches	18 x 5	20 x 6	30 x 6	30 x 8	30 x 8	30 x 8
Speed of drive pulley	135	156	155	150	150	150
Speed of cylinder	75	70	60	50	50	50
Horse power required	2	2½	3	5	6	8
Shipping weight—pounds	1800	2500	3550	3910	4190	5070
Capacity—pounds, per charge	400	600-800	1000-1250	1500	1750	2000
*List price—Style "A" or "B"	**$305**	**$435**	**$520**	**$660**	**$690**	**$800**

No. 281 and 282 have one pair of gears; the larger sizes are fitted with a pair at each end.

The "Eureka" Sifter and Blender

Illustrated on pages 15, 15-A and 15-B

Dimensions, Capacities and Prices

All previous lists cancelled

Size No.	281 Ft. In.	282 Ft. In.	284 Ft. In.	286 Ft. In.	287 Ft. In.	287B Ft. In.
Extreme height	4 4¾	5 2½	6 1	6 8½	6 8½	6 8½
Extreme length	9 0	11 10	12 2	12 9	13 9	16 9
Extreme width	3 2	3 8	4 10	5 0½	5 0½	5 0½
Diameter of cylinder	1 6	2 0	2 6	3 0	3 0	3 0
Length of cylinder	6 0	8 0	8 0	8 0	9 0	12 0
Size of tight and loose pulleys, inches	18 x 5	20 x 6	30 x 6	30 x 8	30 x 8	30 x 8
Speed of drive pulley	135	156	155	150	150	150
Speed of cylinder	75	70	60	50	50	50
Horse power required	2	3	4	6	7	9
Shipping weight—pounds	2100	2800	3950	4310	4690	5570
Capacity—pounds, per charge	400	600-800	1000-1250	1500	1750	2000
*List price—Style "A" or "B"	**$370**	**$510**	**$620**	**$760**	**$810**	**$920**

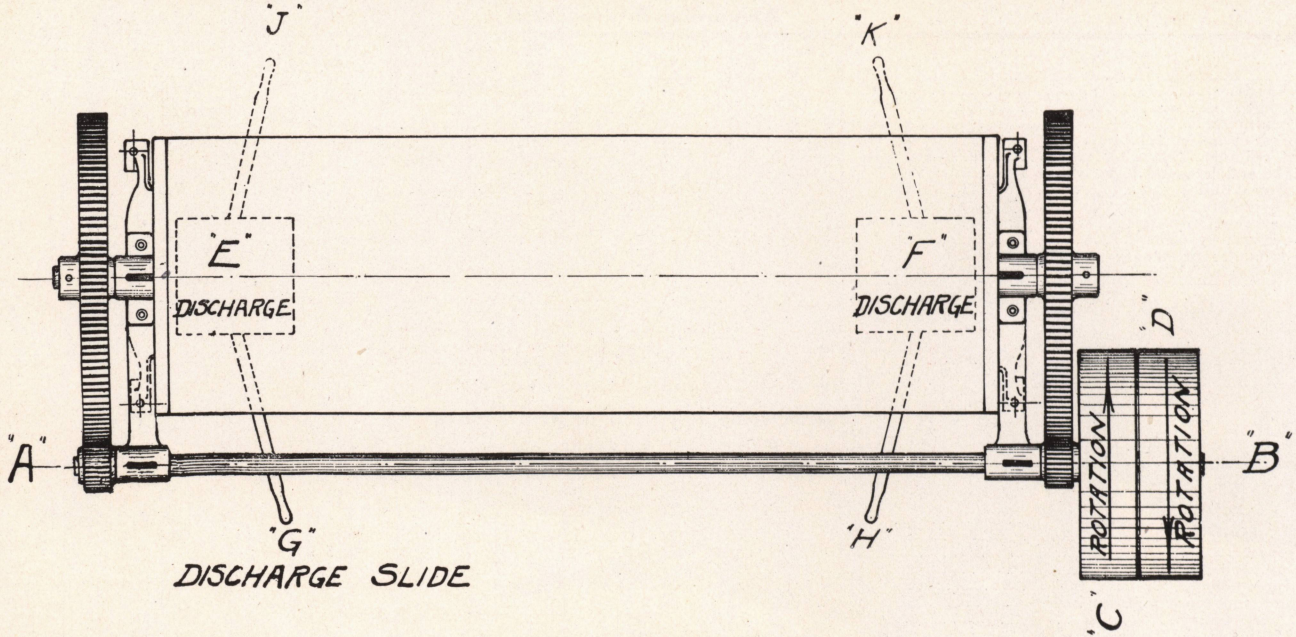
No. 281 and 282 have one pair of gears; the larger sizes are fitted with a pair at each end.

All Prices on This Page are Subject to a Discount

***NOTE:**—The **Style "A"** Machines are spur-gear driven and self-contained.
The **Style "B"** has a wooden base and is bevel-gear driven.
Important:—Refer to Diagram on Page 17 when ordering.

Directions for Ordering "Eureka" Blenders

The drawing below shows a PLAN VIEW of a Style "A" (Spur Gear) Machine



T. and L. pulleys may be placed on the end of countershaft marked "A" or, if preferred, they can be fitted at end marked "B".

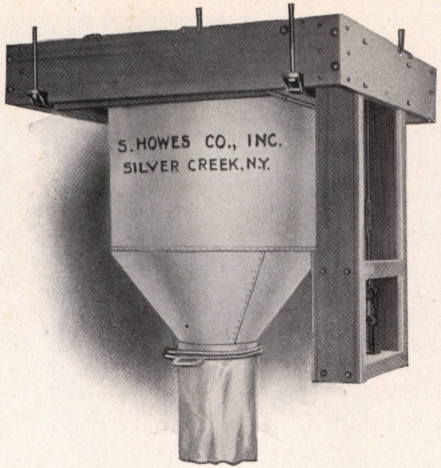
Direction of rotation of drive pulleys should always be specified. Do you desire Rotation "C" or Rotation "D"? (Refer to arrows shown on pulleys.)

Don't fail to state position of feed discharge spout. Which is most convenient, "E" or "F"?

A machine having "E" discharge may have discharge gate lever either at "G" or "J". A Mixer discharging at "F" must have discharge gate lever placed at "H' or else at "K".

Don't mutilate this catalog. Simply indicate your requirements by means of the identifying letters, "A", "B", "C", etc.

It will cost the purchaser but a small sum to install his mixer providing he gives us full information as to how machine should be built to conform to surroundings.



Suspension Hopper Scales

Carefully designed, precision-built outfits such as these have advantages too numerous to mention to commend them to the Miller, Flour Dealer and Baker. Compact and self contained as they are, they occupy a minimum of space. Insofar as their accuracy is concerned, it is vouched for by the manufacturers.

Your need for a Suspension Hopper Scale is based on good business judgment—greater convenience, the prevention of waste and the saving of time and labor. On the principle that 'A Penny saved is a Penny earned' this machine is a profit-yielding investment.

The Scales are usually suspended from the ceiling directly over the mixing machine, but when specially ordered they can be mounted on a track suspended from the ceiling, and thus moved from one place to another; for instance,—over a Blending Reel, a Flour Mixer or a Dough Mixer. The Flour is usually spouted to the Scales from a stock bin or elevator. After being weighed, the slide in the bottom of the conical hopper is drawn out and the flour discharged. The slide is then pushed in and the Scales are ready for another weighing.

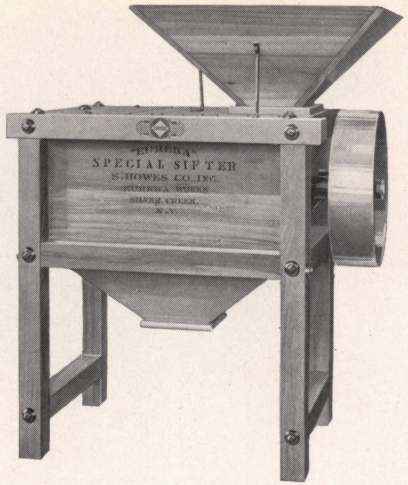
These Scales, which are of the most approved and modern type, are perfectly balanced, accurate and true. The beam, knife-edged fulcrum and the weights are made of a metal which resists rust and corrosion.

Dimensions, Capacities and Prices

Size No.	Size of Hopper		Extreme Dimensions			Net Weight Pounds	Shipping Weight Pounds	Capacity Pounds	List Price F. O. B. Point of Shipment
	Height Ft. In.	Diam. Ft. In.	Height Ft. In.	Length Ft. In.	Width Ft. In.				
1A	3 4	3 1½	3 5	4 10	4 7	575	870	300	$245.00
2B	3 7	3 1½	3 8	4 10	4 7	585	880	400	250.00
3C	4 1	3 1½	4 2	4 10	4 7	595	890	500	255.00
4D	4 7	3 1½	4 8	4 10	4 7	605	900	600	260.00
5E	5 5	3 1½	5 6	4 10	4 7	625	925	800	270.00
6F	6 1	3 1½	6 2	4 10	4 7	645	950	1000	280.00

Prices are Subject to a Discount

"Eureka" Spiral Brush Sifter

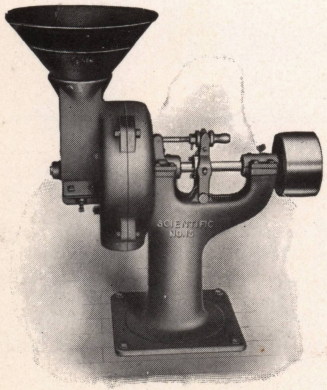


A neatly constructed and easily manipulated machine for sifting flour and the usual ingredients used in the making of Self-Rising Flour and in fact anything of a dry, granular nature. It breaks up lumps, and separates and tails off everything of an irreducible nature, such as bits of paper and burlap, bag-ties, strings and lint.

The sifting mechanism (described on page 15) is enclosed in a very substantial and compact frame provided with a feed hopper and an outlet hopper. The latter is sufficiently high to permit of putting a box, car or basket underneath to receive the sifted material.

Size	Height Ft.	Height In.	Length Ft.	Length In.	Width Ft.	Width In.	Pulley In.	Pulley In.	Speed Per Min.	Barrels Per Hour	List Price
13A	5	8	4	6	2	6	12	x 3	75	5	$ 85
13B	5	11	5	0	2	6	12	x 3	70	10	$110
18A	6	11	5	6	3	8	15	x 3½	60	25	$120
18B	7	5	6	6	3	8	15	x 4	55	50	$140
18C	7	11	7	6	3	8	16	x 4	50	75	$160
18D	8	5	8	6	3	8	18	x 4	45	100	$185

Prices Are Subject to Discount



Salt Crusher and Pulverizer

An excellent machine for softening lumpy salt, soda and phosphate. It disintegrates these materials very thoroughly.

The machine is generally placed directly over a small bin. Owing to the readiness with which salt and similar commodities absorb moisture from the atmosphere, only sufficient of it should be ground to last for a day's run. This mill is also used for grinding lumpy powdered milk and granulated sugar, for cracking grains and nuts and for grinding certain kinds of spices.

A very superior mill, carefully built, strong, durable and very effective.

Floor space, 3 ft. 6 in. x 1 ft. 5 in. Height, 3 ft. 4 in. Drive pulley, 8 in. x 4 in.

Speed (for salt crushing) 800 R. P. M.; (for grinding) 1200 R. P. M.

Grinding Plates 12 in. dia. Shipping weight, 400 pounds. List Price $154.50. F. O. B. Shipping Point.

Price is Subject to Discount

Improved Machinery for Flour Blending Plants

On the pages which follow there will be found illustrated and described in detail a very complete line of equipment for blending flours in Flour Mills, Warehouses, Blending Plants and Bakeries. The machinery referred to consists of

THE "EUREKA" DUPLEX AGITATOR
conceded to be the world's most efficient Flour Blending and Aerating Machine.

MODEL 'J' AUTOMATIC, CONVEYOR TYPE FEEDER

STYLE 2-B AUTOMATIC, CONVEYOR TYPE FEEDER
For measuring and proportioning flour, these are the accepted standard devices.

"HOWES" ROUND REEL FLOUR DRESSER
so much better that it dominates the field.

"MOGUL" FRICTION DRIVEN AUTOMATIC FLOUR PACKER,
the most advanced piece of work yet produced in this line of equipment.

"HOWES" FRICTION DRIVEN AUTOMATIC FLOUR PACKER,
a fast working outfit for barrels and sacks.

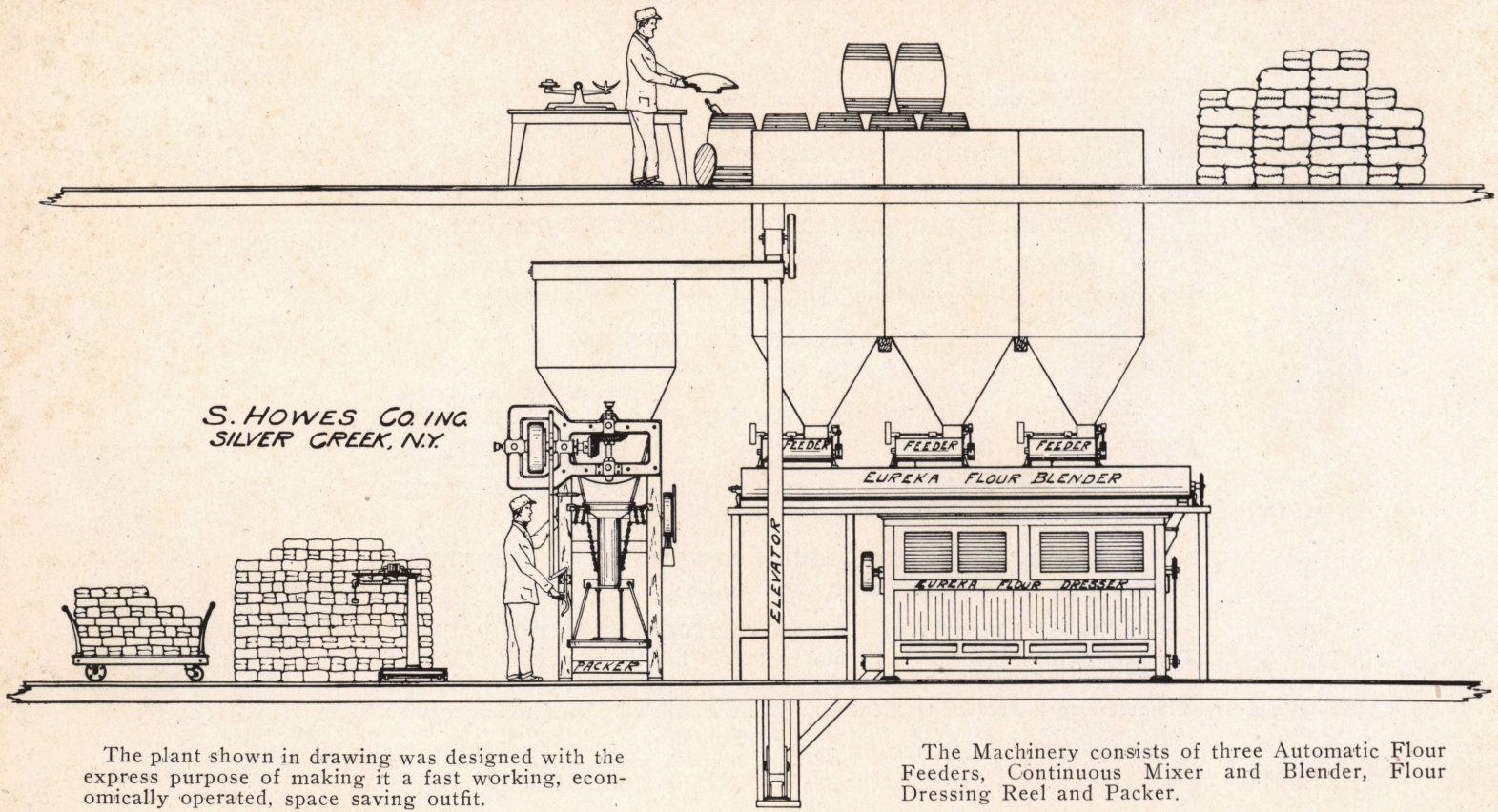
"JEWEL" FRICTION DRIVEN AUTOMATIC FLOUR PACKER,
an excellent machine for putting up small sacks.

"RAPID" FRICTION DRIVEN AUTOMATIC FLOUR PACKER,
For packing household packages and cartons it has the reputation of being the fastest.

We take pleasure in referring the reader to the drawing on the following page which shows a

"Eureka" Automatic Flour Dressing, Blending and Packing Plant

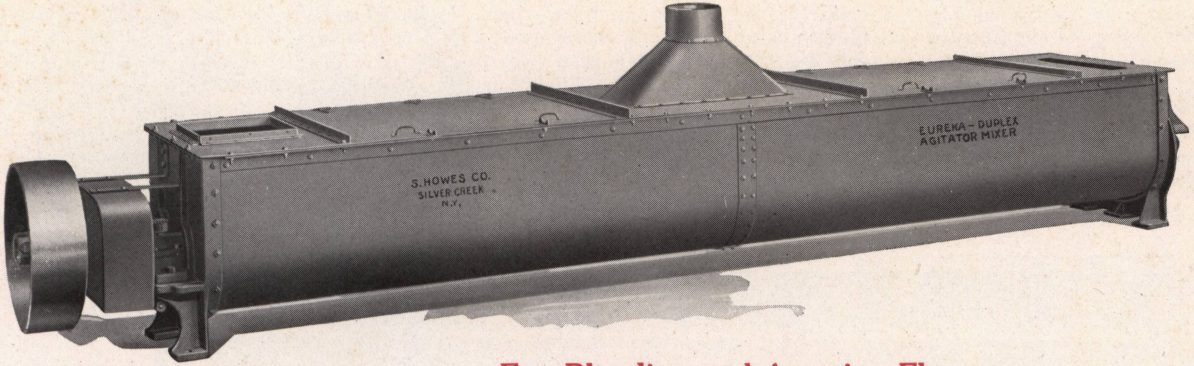
"Eureka" Automatic Flour Dressing, Blending and Packing Plant



The plant shown in drawing was designed with the express purpose of making it a fast working, economically operated, space saving outfit.

The Machinery consists of three Automatic Flour Feeders, Continuous Mixer and Blender, Flour Dressing Reel and Packer.

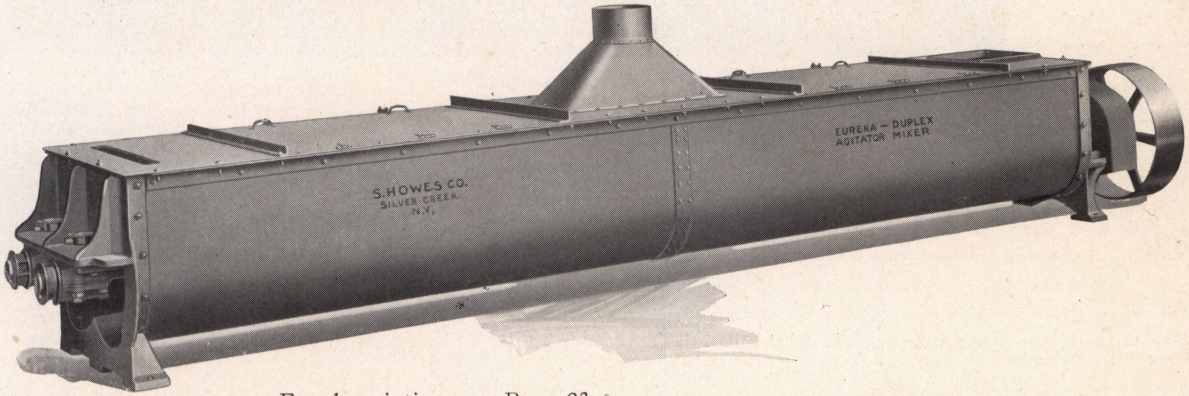
"Eureka" Duplex Agitator



A CONTINUOUS FLOW MACHINE with ADJUSTABLE (mix-more-or-mix-less Propeller Blades

For Blending and Aerating Flour

Illustration at the right shows the free, unobstructed outlet for the discharge of the mixed flour. Note the tank's bifurcated, double U bottom.



For description see Page 23.

"Eureka" Duplex-Agitator

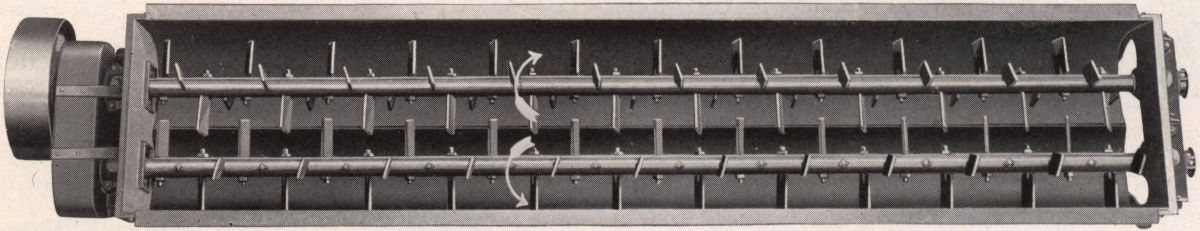
Distinctly the latest and most advanced Flour Blender of the Cotinuous Flow type. It has a real individuality. It is a masterful exposition of the two factors of character which Howes established and maintains—Effectiveness and Durability.

It will be seen that within a suitable casing we provide Two Cylinders (coupled together by spur gears), having adjustable mix-more-or-mix-less propeller blades. The latter can be set at any angle desired. The flour thus remains in the mixing chamber only long enough to be thoroughly blended and aerated.

The cylinders revolve away from each other. They throw the flour back and forth from one cylinder to the other, conveying it simultaneously toward the outlet, which latter is free and unobstructed. The Twin Cylinders and the mixing chamber with double trough bottom form a distinctly novel mechanical combination.

Note the opposite directions in which mixing shafts revolve.

Cover removed to show interior.



Driving and Feeding End.

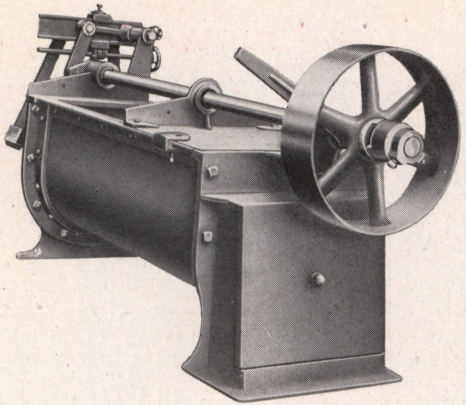
Discharge End. (Unobstructed Outlet.)

For Blending and Aerating Flour.

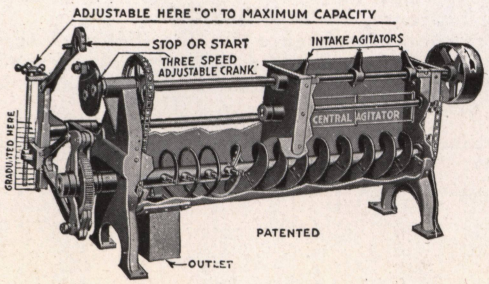
This machine mixes and blends at such extraordinarily high speed and does the work so faultlessly that it completely outrivals everything else. Were it the custom (as it rightly should be) to buy a Mixer on the price basis of 'tons-per-hour-output,' competing machines would receive scant consideration.

CAPACITY	Length	Width	Height	Drive Pulley	Speed	Power Required	Shipping weight	Cover and Exhaust Connection	Price
Two to twenty-five tons per hour	14 ft. 3 in.	2 ft. 7 in.	2 ft. 0½ in.	20 in. x 6 ¼ in.	140 R. P. M.	6 to 8	2080 lbs.	$35 Extra	**$620**

Prices are Subject to a Discount.



Prices are subject to change without notice.



Prices are subject to change without notice.

Model "J" Automatic Conveyor Type Feeder

All Iron Construction

These machines have double flight conveyors, and are equipped with improved variable speed mechanism which insures a continuous movement of the stock and a regular uniform discharge. New safety end discharge spout prevents the stripping of conveyors in the event of a choke-up beyond feeder. Can be started and stopped instantly by simple clutch.

Size	Size of Inlet	Height to Inlet	Size Over All	Pulley	Shipping Weight	Capacity Pounds Per Hour	Price F. O. B. Shipping Point
No. 0	4x10-in.	10-in.	11x33-in.	Speed, 40 to 50 — 10x2-in. or 23 or 30 tooth sprocket if preferred.	140	600	$ 33.50
No. 1	5x18-in.	10-in.	11x37-in.		165	1,000	39.00
No. 2	7x15-in.	11-in.	13x40-in.		205	3,000	50.00
No. 2A	7x20-in.	11-in.	13x44-in.		215	10,000	55.75
No. 3	10x17-in.	14-in.	15x45-in.		270	12,500	72.50
No. 3A	10x27-in.	14-in.	15x52-in.		300	17,500	83.75
No. 4	13x20-in.	18-in.	19x54-in.		440	25,000	178.75
No. 4A	13x30-in.	18-in.	19x60-in.		460	30,000	190.00
No. 5	17x30-in.	24-in.	20x64-in.		550	50,000	245.50

Prices are Subject to a Discount.

Style 2B Automatic Conveyor Type Feeder

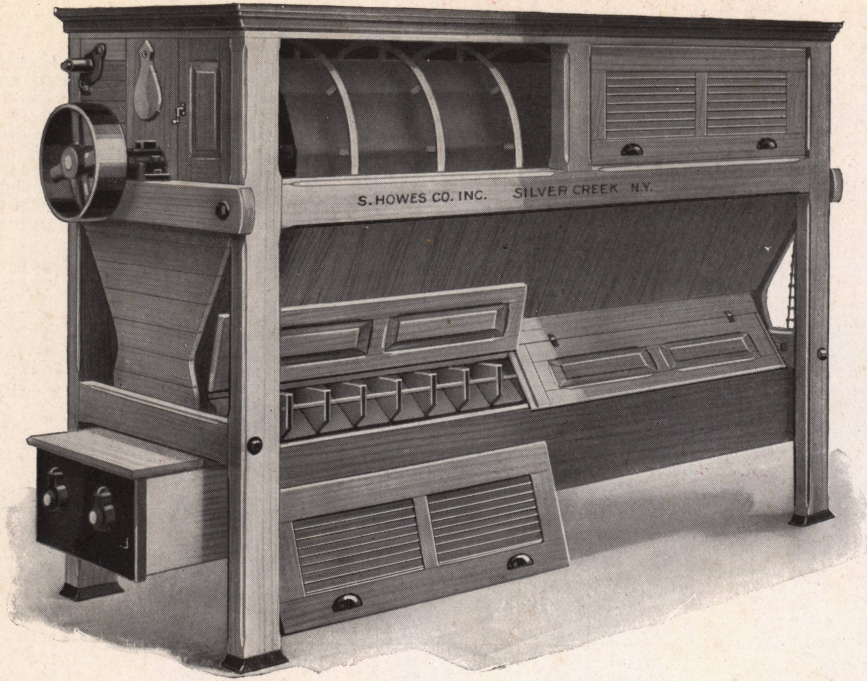
All Iron Construction

Size	Pulley	Speed R. P. M.	Size Inlet, Inches — Length Width "F" Hopper	Over all in Inches — Length	Width	Height	Shipping Weight Lbs.	Capacity Pounds Per Hour	Price F. O. B. Shipping Point
430	8x3	20 to 50 R. P. M. for all sizes.	4½x15	47	22	22	180	1,000	$ 63.50
636	8x3		6¼x20	59	26	23	250	3,000	76.00
930	14x3		9¼x12	54	27	28	290	10,000	95.00
936	14x3		9¼x18	60	27	28	315	12,500	100.00
948	14x3		9¼x30	72	27	28	340	17,500	116.00
1236	20x4		12½x16	67	29	44	500	25,000	190.00
1248	20x4		12½x24	77	29	44	530	27,500	211.50
1260	20x4		12½x30	87	29	44	700	30,000	232.50
1648	20x5		17 x30	96	42	63	1080	45,000	264.50
1660	20x5		17 x36	108	42	63	1200	50,000	291.00

Use "F" inlet for soft or ground material that flows slowly.

For special central agitator in "F" hoppers add 10% to above list prices. These agitators are used only in "F" hoppers which are for slow flowing materials.

Prices are Subject to a Discount.



The "Howes"

Round Reel Flour Dresser

It would sound boastful were we to express our own opinion of this machine's merits. Suffice it to say that the 'Howes' has become exceedingly popular; millers and flour factors speak of it in the highest terms.

A rapid, clean and free Bolter, yet its action on the stock is very gentle.

All the working parts are substantially made, easy of access and quickly regulated. Adjustable cut-off slides permit of taking off the bolted stock at any point desired.

A Triple Cleaning Brush of the revolving type prevents the meshes of the silk from clogging up. Whatever accumulates on the outside of the cover is brushed off downwardly.

A very effective yet simple device is provided for stretching the cloth when on the cylinder.

All bearings, including those for the iron conveyor box ends, are babbitted.

Users show preference for the "Howes" reel because they have learned that they can depend on it always. It dominates the field because it is so much better.

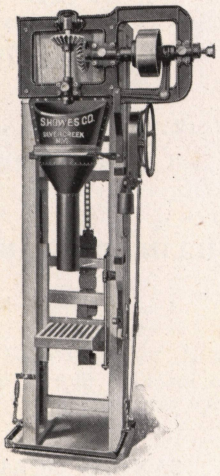
Diameter of Reel	Length of Frame	Width of Frame	Length of Shaft	Drive Pulley Inches	Speed	Height to Center Drive Pulley	Extreme Height	Shipping Weight Pounds	Price
22 Inches	8 ft.	2 ft. 7½ in.	9 ft. 8 in.	14 x 4	30	3 ft. 4¼ in.	4 ft. 6½ in.	1250	$300
26 "	8 ft.	2 ft. 11½ in.	9 ft. 8 in.	16 x 4½	33	3 ft. 6½ in.	4 ft. 11 in.	1450	$340
30 "	8 ft.	3 ft. 3½ in.	9 ft. 8 in.	18 x 5	36	3 ft. 10 in.	5 ft. 4 in.	1650	$380
34 "	8 ft.	3 ft. 7½ in.	9 ft. 8 in.	20 x 5½	39	4ft. 1¾ in.	5 ft. 9½ in.	1750	$422

Clothing Extra. Cross (bevel gear) Drive $25.00 extra, Net.

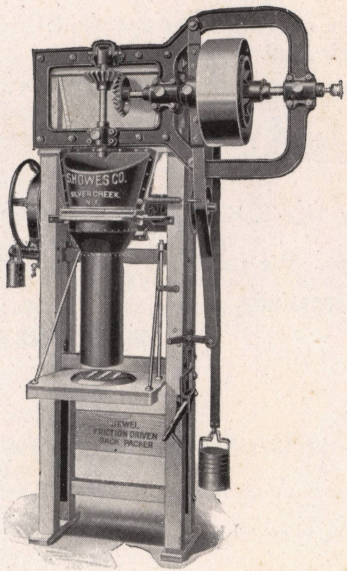
Prices are Subject to a Discount.

The "Rapid" The "Jewel" The "Howes" The "Mogul"

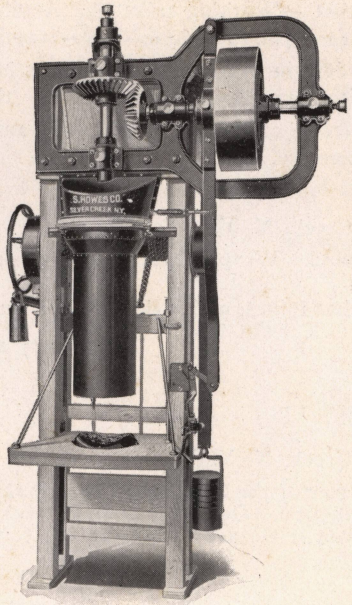
Friction Driven Flour Packers



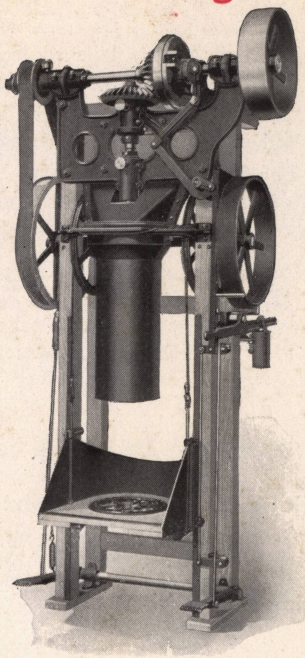
Extreme height	8 ft. 1 in.
Extreme width	3 ft. 3 in.
Extreme depth	3 ft. 0 in.
Size of drive pulley	10 in. x 4 in.
Speed	350-400 R. P. M.
Shipping weight	800 Lbs.
Size hopper inside	16 x 18 in.
Price, each additional Tube and Auger	$ 20
Price, complete for one size sack	$225



Height	7 ft. 10⅞ in.
Width	4 ft. 8¾ in.
Depth	3 ft. 6½ in.
Size of drive pulley	18 in. x 6½ in.
Speed	160 R. P. M.
Shipping weight	900 Lbs.
Size hopper, inside	18 in. x 21 in.
Price, each additional Tube and Auger	$ 15
Price, complete for one size sack	$225



Height	8 ft. 9 in.
Width	5 ft. 0 in.
Depth	3 ft. 8 in.
Size of drive pulley	18 in. x 6½ in.
Speed	160 R. P. M.
Shipping weight	1375 Lbs.
Size hopper, inside	21 in. x 24 in.
Price, each additional Tube and Auger	$ 15
Price, complete for one size sack or barrel	$280



Height	9 ft. 5½ in.
Width	4 ft. 8½ in.
Depth	3 ft. 6 in.
Size of drive pulley	20 in. x 5½ in.
Speed	400 for sacks, 160 for bbls.
Shipping weight	1700 Lbs.
Size hopper, inside	14 in. x 26 in.
Price, each additional Tube and Auger	$ 15
Price, complete for one size sack or barrel	$370

Prices are Subject to a Discount.

To those who may desire more complete information we shall be glad to mail circulars.

The "Eureka" Made its Way by the Way it's Made

There is a very true saying that —'Nothing talks like Actual Performance.' Herein lies the great success of the "EUREKA" line of Blenders. It is one thing to claim something—but— another thing to prove it.

"EUREKA" Mixers and Blenders in practical performance have never failed to achieve all that was claimed for them. This has resulted in their universal recognition as the best machines of their kind.

The following testimonials, selected at random from scores and scores of other letters, prove conclusively that our claims on behalf of our product are not exaggerated.

Campbell Hill, Ill.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—Your letter at hand. We purchased one of your "EUREKA" Mixers about three years ago, after having investigated the merits of several others.

The "EUREKA" is a Mixer that mixes, and it does it in a hurry. We are highly pleased with it.

Yours very respectfully,

MOHLENBROCK MILLING COMPANY.

St. Louis, Mo.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—We have your letter of the 21st inst., and will say the Blending Machine you sold us some six or seven months ago is giving us the very best of satisfaction. Outside of being a very good, serviceable machine, we find it a machine that is built to last for a long time, and assure you if we are in the market for any more blenders we will certainly give you the preference in placing our order.

Yours very truly,

SAXONY MILLS.

Burlington, N. Car.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—We have been using one of your "EUREKA" Sifters and Blenders for over twelve months for making Self-Rising flour. It affords us pleasure to say that we are enabled to make a Self-Rising Flour that is thoroughly mixed and blended, and which gives our trade the best of satisfaction.

Wishing you much success, we are,

Yours truly,

DIXIE MILLING COMPANY.

S. Howes Company, Inc., Silver Creek, N. Y.

Burlington, N. Car.

Gentlemen:—In 1917 we purchased from your Mr. Mentz an "EUREKA" Sifter and Blender for the purpose of making Self-Rising Flour; also a Jewel Friction Driven Sack Packer.

We are glad indeed to say to you that both the Mixer and Packer are working very nicely and entirely satisfactory.

Very truly yours,

HICO MILLING COMPANY.

Mooresville, N. Car.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—The machine is very satisfactory in every respect. The flour is well mixed and gives entire satisfaction.

Yours very truly,

MOORESVILLE FLOUR MILLS.

Liberty, N. Car.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—We are writing you today regarding our Sifter and Blender. We are glad to advise you that we are more than pleased with it. It is doing just what you recommended it to do.

Very truly yours,

LIBERTY MILLING COMPANY.

Woodleaf, N. Car.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—The Mixer is satisfactory in every way. Our flour is giving the best of satisfaction.

Yours very truly,

RICE & RATLEDGE.

Bridgewater, Va.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—We can recommend the "EUREKA" Blender highly to anyone wanting a Self-Rising outfit.

Very truly yours,

NATURAL FALLS MILLING COMPANY.

Lynnwood, Va.

S. Howes Company, Inc., Silver Creek, N. Y.

Gentlemen:—The machine is working O. K.

Very truly yours,

COINER MILLING COMPANY.

"QUALITY of high character and prompt SERVICE"

Is the EUREKA Motto

"Eureka" machines not only excite the admiration of the mechanically inclined, the enthusiasm of those who are thrilled by unusual performance and the admiration of those who like to see a good mechanism, but they always attract the far sighted buyer who will learn from "Eureka" owners that they have not been disappointed in their first expectation and have received the maximum use of their machines because of the prompt and courteous service always available.

Users of "EUREKA" Machines secure the maximum of service at a minimum cost of upkeep. The distribution and class of materials used in the working parts of these machines are such as will insure durability—the workmanship is excellent. Hence, replacements are seldom needed and, when they are, we charge only a moderate price for them. We are prompted to mention this owing to the fact that certain manufacturers make it a practice to sell their machines at a low figure in the first instance, but, when repairs are subsequently required, the customer is forced to pay an extortionate price for them. In the long run, such equipment costs considerably more than does "EUREKA."

The object of our Service Department is to see that your "EUREKA" Machines give satisfaction. Should you need any information concerning them or their operation, do not hesitate to ask. When you require renewals, this department will fill your order correctly and promptly, and the repairs will be invoiced at a rational price. You can rest assured you will receive fair and courteous treatment.

One of the best advertisements for the machinery builder is the good will and co-operation of his clients; to such we owe the success of our business.

S. HOWES CO., Inc.

Eureka Works **Silver Creek, N. Y.**

TRADE

MARK

This Badge of Distinction

is Borne by all machines manufactured by

S. HOWES CO., Inc.

EUREKA WORKS

SILVER CREEK, N. Y.

European Branch: 64 Mark Lane, London, E. C. England.